Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	13 August 2025
Team ID	NM2025TMID12700
Project Name	Educational Organisation Using ServiceNow
Maximum Marks	4 Marks

Technical Architecture:

The architecture focuses on providing a **cloud-based, scalable, and secure platform** using ServiceNow to streamline student support services, including academic queries, IT helpdesk, and administrative requests. All user interactions, service logic, and database operations are managed through ServiceNow's low-code/no-code framework and integrated technologies

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI and Mobile Portal for students, faculty, and admin	ServiceNow Service Portal, HTML/CSS/JavaScript
2.	Application Logic-1	Workflow automation: ticket creation, routing, approval flows	ServiceNow Flow Designer, Workflow Editor
3.	Application Logic-2	Email/SMS notifications for request updates	ServiceNow Notification Engine, Email Scripts
4.	Application Logic-3	Virtual assistant to guide users to knowledge articles and create tickets	ServiceNow Virtual Agent
5.	Database	Structured ticket, user profile, and request status data storage	ServiceNow Configuration Management Database (CMDB)
6.	Cloud Database	Cloud-hosted database service with backup and real-time access	ServiceNow Cloud Infrastructure, AWS RDS (optional)
7.	File Storage	Attachments for student applications or documentation	ServiceNow Attachment Table, Google Drive Integration
8.	External API-1	Academic calendar and exam schedule syncing	Custom REST APIs or Google Calendar API
9.	External API-2	University identity verification	Aadhaar API / University ID Validation Service

S.No	Characteristics	Description	Technology
10.	Machine Learning Model	Optional: auto-categorization of service requests or chatbot intent routing	ServiceNow Predictive Intelligence, Azure NLP Model
11.	Infrastructure (Server / Cloud)	Hosted environment for application and workflow automation	ServiceNow SaaS, Hosted via AWS or ServiceNow Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Styling, responsiveness, and integration tools	Bootstrap, React, JSON, REST API
2.	Security Implementations	User authentication, access control, and secure communications	OAuth 2.0, SSO, HTTPS, Role-Based Access (RBAC), SHA-256
3.	Scalable Architecture	3-Tier: UI layer → ServiceNow Workflow Logic → CMDB/Storage, with modular service catalogs	ServiceNow App Engine Studio
4.	Availability	99.9% uptime with failover support, cloud redundancy	ServiceNow Cloud Infrastructure, Load Balance
5.	Performance	Optimized for concurrency (1000+ student requests/day), caching and dashboard speed enhancements	ServiceNow Performance Analytics, CDN (optional)